

AMENDMENTS TO THE CLAIMS

Please amend claims 1-4 and 13-20, cancel claims 21-25 and add new claims 26-29, as shown below. A complete listing of the claims, including their current status, is set forth below.

1. **(Currently amended)** A method of making a plurality of microbar encoders, the microbar encoders having a characteristic detectable signal and capable of linking to a probe molecule, comprising:

(a) producing a multi-layered structure ~~depositing one or more layers unsupported by a template, each layer of said structure~~ comprising a transducing material, and

(b) dividing the multi-layered structure ~~deposited layers~~ into the plurality of microbar encoders, wherein the plurality of microbar encoders have ~~substantially identical~~ a characteristic detectable signal signals.

2. **(Currently amended)** The method of claim 1, wherein the method further comprises:

(c) detaching the plurality of microbar encoders from ~~the~~ a substrate.

3. **(Currently amended)** The method of claim 2, wherein the method further comprises, ~~prior to depositing the one or more layers in the stack~~, depositing a removable layer directly onto the substrate and, after dividing the multi-layered structure ~~stacked layers~~, removing the removable layer from the substrate, wherein removing the removable layer frees the plurality of microbar encoders.

4. **(Withdrawn)** The method of claim 1, wherein the multi-layered substrate is produced layers are deposited by coextrusion.

5. **(Original)** The method of claim 1, wherein the transducing material produces the characteristic detectable signal by electromagnetic emission or absorption.

6. **(Withdrawn)** The method of claim 1, wherein the transducing material is selected from the group consisting of an organic dye, an inorganic phosphor, a metal-organic phosphor, a fluorescent dye, a pigment, a scattering or absorbing powder, a three-dimensional photoluminescent dendrimer molecule, and combinations thereof.

7. **(Original)** The method of claim 1, wherein the transducing material is a quantum dot.

8. **(Original)** The method of claim 1, wherein the probe molecule is capable of binding with a target molecule.

9. **(Original)** The method of claim 8, wherein the probe molecule or the target molecule comprises a biological molecule.

10. **(Original)** The method of claim 9, wherein the biological molecule comprises a nucleic acid molecule.

11. **(Withdrawn)** The method of claim 9, wherein the biological molecule comprises a monoclonal or polyclonal antibody.

12. **(Withdrawn)** The method of claim 8, wherein the probe molecule or the target molecule comprises a small molecule.

13. **(Currently amended)** The method of claim 1, wherein one or more of the ~~deposited~~ layers comprises a polymeric matrix.

14. **(Withdrawn)** The method of claim 1, wherein the multi-layered ~~structure is deposited layers are divided by dieing or laser ablation.~~

15. **(Withdrawn)** The method of claim 1, wherein the multi-layered ~~structure is deposited layers are divided by mechanical punching.~~

16. (Currently amended) A method of making a plurality of microbar encoders, comprising:

dividing a multi-layered structure comprising transducing material to produce a plurality of microbar encoders, The method of claim 1, wherein the deposited layers are wherein said dividing is done by divided using photolithography.

17. (Currently amended) The method of claim 16, wherein the multi-layered structure is deposited layers are divided by depositing a patterned mask layer over a surface of the multi-layered structure deposited layers, the mask layer protecting a portion of the surface of the multi-layered structure deposited layers, and etching through an unprotected portion of the surface of the multi-layered structure deposited layers.

18. (Currently amended) A method of making a plurality of microbar sensors comprising:

(a) making a plurality of microbar encoder encoders by: according to the method of claim 1 and

- (i) producing a multi-layered structure, each layer of said structure comprising a transducing material, and
- (ii) dividing the multi-layered structure into the plurality of microbar encoders, wherein the plurality of microbar encoders have a characteristic detectable signal

(b) linking a probe molecule to the plurality of microbar encoder encoders.

19. (Currently amended) A method of making an assembly of microbar encoders comprising:

(a) making a first plurality of microbar encoders by: according to the method of claim 1

- (i) producing a first multi-layered structure, each layer of said first multi-layered structure comprising a transducing material, and
- (ii) dividing the first multi-layered structure into the plurality of first microbar encoders

and

(b) making a second plurality of microbar encoders by: according to the method of claim 1,

- (i) producing a second multi-layered structure, each layer of said second multi-layered structure comprising a transducing material, and
- (ii) dividing the second multi-layered structure into the plurality of second microbar encoders

wherein the first and second plurality of microbar encoders have different characteristic detectable signals.

20. (Currently amended) A method of making an assembly of microbar sensors comprising:

(a) making a first plurality of microbar sensors by: according to the method of claim 18

- (i) making a plurality of microbar encoders by:

- (a) producing a first multi-layered structure, each layer of said structure comprising a transducing material, and
- (b) dividing the multi-layered structure into the plurality of first microbar encoders; and

(ii) linking a probe molecule to the first plurality of microbar encoders,
and
(b) making a second plurality of microbar sensors by: according to the method of claim 18,

- (i) making a plurality of microbar encoders by:

- (a) producing a second multi-layered structure, each layer of said structure comprising a transducing material, and
- (b) dividing the second multi-layered structure into the plurality of second microbar encoders;

(ii) linking a probe molecule to the second plurality of microbar encoders;

wherein the first and second plurality of microbar sensors have different characteristic detectable signals.

21-25. (Cancelled)

26. (New) A method of making a plurality of microbar encoders, the microbar encoders having a characteristic detectable signal and capable of linking to a probe molecule, comprising:

(a) producing a multi-layered structure, each layer of said structure comprising a transducing material, and

(b) non-mechanically dividing the multi-layered structure into the plurality of microbar encoders, wherein the plurality of microbar encoders have a characteristic detectable signal.

27. (New) The method of claim 26, wherein said non-mechanically dividing uses photolithography.

28. (New) The method of claim 26, wherein said non-mechanically dividing uses ion milling.

29. (New) The method of claim 26, wherein said non-mechanically dividing uses laser ablation.